

AMENDMENTS TO THE CLAIMS

Amend the claims as follows:

1. (currently amended) A material dispensing device, comprising an elongated cantilever comprising a plurality of thin films arranged relative to one another to define a microchannel in the cantilever, said cantilever having a material dispensing tip proximate an end of the ~~cantilever~~ cantilever and ~~communicated to~~ communicating with the microchannel to receive material therefrom, said material dispensing tip comprising a pointed tip body and an annular shell comprising one of the thin films spaced about the tip body to define a material dispensing annular space about the tip body.

2. (currently amended) The device of claim[[1]] 1 wherein the microchannel is defined between a pair of thin films that in part form a body of the cantilever.

3. (currently amended) The device of claim 2 further including a sealing layer disposed on one of the thin films and overlying outermost edges of the thin films to seal a gap at the outermost edges.

4. (currently amended) The device of claim 3 wherein the outermost edges edge of one of the thin films include includes an angled region extending from a respective planar film region and wherein the sealing layer fills any the gap between the thin films at the angled regions region.

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5.(currently amended) The device of claim 4 wherein one of the thin films comprises dual thin film layers having different residual ~~stress~~ stresses.

6.(currently amended) The device of claim 2 wherein the microchannel ~~is communicated to~~ communicates with a material-containing reservoir that supplies material to the microchannel.

7.(original) The device of claim 5 wherein the reservoir is provided on a semiconductor chip substrate and the cantilever extends from the chip substrate.

8.(canceled)

9.(original) The device of claim 8 wherein the tip body comprises a material more hydrophilic than the shell material.

10.(original) The device of claim 8 wherein a substrate or a first thin film defines the tip body and a third thin film defines the shell about the tip body.

11.(original) The device of claim 1 wherein one of the thin films is connected to a semiconductor chip substrate.

12.(currently amended) The device of claim 1 wherein the microchannel has a width dimension in the range of about [[4]] four to about [[10]] ten microns and a height dimension in the range of about 0.05 to about 1.5 microns.

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13. (currently amended) The device of claim 8 wherein the tip has an apex and a height of about [[3]] three to about [[5]] five microns of the tip relative to a plane of the cantilever.

14. (original) The device of claim 1 wherein the cantilever has a length of about 100 to about 500 microns measured from an edge of a chip substrate.

15. (original) The device of claim 1 wherein the microchannel comprises first and second side-by-side channel regions separated by a wall wherein the channel regions terminate in a common arcuate channel region extending partially about the dispensing tip.

16. (original) The device of claim 1 including an actuator on the cantilever to impart bending motion thereto.

17. (original) The device of claim 16 wherein the actuator is selected from one of a piezoelectric actuator, thermal actuator, and a magnetic actuator.

18. (original) The device of claim 1 that includes a plurality of said cantilevers integrated in linear or two dimensional arrays or in stacks of two dimensional arrays to form a three dimensional array.

19.-55. (canceled)

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56. (original) A material dispensing device, comprising an elongated cantilever comprising first, second, and third thin films arranged relative to one another to define a microchannel in the cantilever and a material dispensing tip proximate an end of the cantilever, said material dispensing tip being defined between a pointed tip body on a substrate and the third thin film.

57. (currently amended) The device of claim 56 including a reservoir for the material on the substrate, said reservoir communicating [[to]] with the microchannel.

58. (canceled)

59. (new) A material dispensing device, comprising an elongated cantilever comprising a first thin film, an intermediate second thin film on the first thin film, and a third thin film on the second thin film wherein the intermediate second thin film is partially removed to define a microchannel between the first thin film and the third thin film of the cantilever, said cantilever having a material dispensing tip proximate an end of the cantilever and communicating with the microchannel to receive material therefrom.

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60. (new) The device of claim 59 further including a sealing layer disposed on one of the first thin film or the third thin film in a manner to seal a gap at an outermost edge thereof.

61. (new) The device of claim 60 wherein the outermost edge of the one of the first thin film or third thin film includes an angled region extending from a respective planar film region and wherein the sealing layer fills the gap at the angled region.